1. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

   More than 10 units from the number 3.

   A. $[-7, 13]$

   B. $(-\infty, -7] \cup [13, \infty)$

   C. $(-\infty, -7) \cup (13, \infty)$

   D. $(-7, 13)$

   E. None of the above

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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

   $$-9x + 5 \leq 5x + 4$$

   A. $(-\infty, a]$, where $a \in [-0.63, 0.04]$

   B. $[a, \infty)$, where $a \in [0.03, 0.34]$

   C. $[a, \infty)$, where $a \in [-0.29, -0.03]$

   D. $(-\infty, a]$, where $a \in [0.05, 0.16]$

   E. None of the above.

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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

   $$-9 + 4x < \frac{37x - 8}{8} \leq -7 + 3x$$

   A. $(-\infty, a] \cup (b, \infty)$, where $a \in [8.25, 14.25]$ and $b \in [2.25, 8.25]$

   B. $(a, b]$, where $a \in [8.25, 17.25]$ and $b \in [3, 5.25]$

   C. $[a, b)$, where $a \in [9.75, 15]$ and $b \in [2.25, 4.5]$

   D. $(-\infty, a) \cup [b, \infty)$, where $a \in [11.25, 14.25]$ and $b \in [-1.5, 7.5]$

E. None of the above.

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 7x > 9x \text{ or } 9 + 3x < 4x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-10.5, -6]$ and $b \in [2.25, 7.5]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.5, 0]$ and $b \in [8.25, 9.75]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6.75, -3]$ and $b \in [8.25, 10.5]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-13.5, -7.5]$ and $b \in [0, 4.5]$

E. $(-\infty, \infty)$

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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-7}{2} - \frac{9}{8}x \leq \frac{5}{9}x - \frac{4}{5}$$

A. $[a, \infty)$, where $a \in [-4.5, 0.75]$

B. $(-\infty, a]$, where $a \in [0.75, 5.25]$

C. $[a, \infty)$, where $a \in [-1.5, 3]$

D. $(-\infty, a]$, where $a \in [-6, -0.75]$

E. None of the above.

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-8}{7} + \frac{6}{2}x > \frac{7}{9}x + \frac{7}{5}$$

A. (a, ∞), where $a \in [0, 4.5]$

B. $(-\infty, a)$, where $a \in [-0.75, 4.5]$

C. (a, ∞), where $a \in [-3, -0.75]$

D. $(-\infty, a)$, where $a \in [-4.5, 0]$

E. None of the above.

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 6x > 8x \text{ or } 6 + 9x < 10x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.5, 2.25]$ and $b \in [5.25, 12]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.5, -0.75]$ and $b \in [3.75, 9]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9.75, -5.25]$ and $b \in [0.75, 2.25]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-8.25, -3.75]$ and $b \in [0, 2.25]$

E. $(-\infty, \infty)$

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8. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No less than 6 units from the number 5.

A. $[1, 11]$

B. $(-\infty, 1] \cup [11, \infty)$

C. $(1, 11)$

D. $(-\infty, 1) \cup (11, \infty)$

E. None of the above

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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 5x \leq \frac{25x - 8}{4} < 6 + 4x$$

A. $[a, b)$, where $a \in [-2.4, -1.05]$ and $b \in [0, 6]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-2.25, 1.5]$ and $b \in [-1.5, 6]$

C. $(a, b]$, where $a \in [-2.25, -0.75]$ and $b \in [0, 4.5]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-5.25, 0]$ and $b \in [1.5, 8.25]$

E. None of the above.

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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$3x + 8 \geq 5x - 10$$

A. $[a, \infty)$, where $a \in [9, 13]$

B. $(-\infty, a]$, where $a \in [6, 10]$

C. $(-\infty, a]$, where $a \in [-9, -3]$

D. $[a, \infty)$, where $a \in [-9, -7]$

E. None of the above.
